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PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements in or relating to a Chronometer

We, BATORI COMPUTER COMPANY, INC., a corporation organized under the laws of the State of New York, one of the United States of America, of 551 Fifth Avenue, City and State of New York, United States of America; and ULYSSE NARDIN, S.A., of Le Locle, Switzerland, a Company organized under the laws of Switzerland, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:

To these ends, the present invention consists in providing a chronometer for the simultaneous indication of the standard time and hour-angle corresponding to the sidereal time on a single dial, having two spring barrels secured in a single case for driving two wheel-works, a single escapement to regulate the motion of the wheelworks, and indicating members for the standard time and hour-angle corresponding to the sidereal time which are driven by one of the two wheelworks and a kinematic connection between these gears which establishes a motional relation between the above mentioned indicating members, characterized in that the above mentioned kinematic connection consists of a differential gear.

In order that the invention may be more clearly understood and readily carried into effect, the same will now be described more fully with reference to the accompanying drawings, in which:

Fig. 1 is a top view of the dial and of the indicating members.

Figs. 2 and 3 are schematic representations of the wheelwork and of the differential gear respectively.

The present chronometer indicates at the same time standard and hour-angle corresponding to sidereal time. The standard time is indicated by the hands 10, 11 and 12, which indicate respectively the 24 hours, 60 minutes and 60 seconds, while the hands 13, 14 and 15 indicate the corresponding sidereal time in arc degrees, minutes and seconds.

The chronometer contains two wheelworks, which are driven by two separate spring barrels 16 and 17. The first wheelwork consists of a centre wheel 18, a third wheel 19 and a fourth gear 20. The hour hand 10 is rigidly connected with the hour wheel 21, which is driven by the cannon pinion 22 over the motion work 23; the minute hand 11 is carried by the cannon pinion 22. The seconds hand 12 is rigidly connected with the fourth gear 20.

The second wheelwork consists of a centre wheel 24 and a third wheel 25. This wheelwork is connected kinematically with the first wheelwork by a differential gear 26 and a pinion 27 which is secured on the fourth wheel arbor 20a of the first wheelwork.

The motion of the two wheelworks is regulated by a single escapement 28, which is in engagement with the balance wheel 29. The differential gear 26 establishes a kinematic connection of an extremely constant nature between the motion of the indicating members for the standard and sidereal time. This connection, which is represented in detail in Fig. 3, has two coaxial sun wheels 30 and 31, each of which consists of two toothed wheels, also a planet gear 32 which is held by a plate 33 and a pinion 34.

The sunwheel 30 is connected over its wheel 30a with the wheel of the gear 25 and over its wheel 30b with the pinion 32a of the planet gear 32. The sunwheel 31 is connected over its wheel 31a with the pinion 34, and over its wheel 31b with the wheel 32b of the planet gear 32. The plate 33 is in engagement both with the pinion 27 and with the pinion 34. The wheel 31a and the plate 33 have the same diameter but their number of teeth differs by one.

The chronometer is also equipped with a hand setting device which is independent of the hands 12, 13, 14 and 15 and which is not

(*Price* 3*s.* 6*d.*)

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represented in detail. Also provided is a mechanism for locking the balance wheel by means of an outside pushbutton, (not represented) as well as a winding device for the two spring barrels 16 and 17 by means of a single winding shaft, with the interposition of the wheels 35, 36 and 37.

WHAT WE CLAIM IS:

1. Chronometer for the simultaneous indication of the standard time and hour-angle corresponding to the sidereal time on a single dial, having two spring barrels secured in a single case for driving two wheelworks, a single escapement to regulate the motion of the wheelworks, and indicating members for the standard time and hour-angle corresponding to the sidereal time which are driven by one of the two wheelworks and a kinematic connection between these gears which establishes a motional relation between the above mentioned indicating members, characterized in that the above mentioned kinematic connection consists of a differential gear.

2. Chronometer according to claim 1, wherein the differential gear contains two coaxial planet gears each of which consists of two gear wheels, one gear being connected through its wheel with a gear of one of the wheelworks and through its second wheel with the pinion of a satellite gear, the toothed plate being connected in turn, on the one hand, with the last mentioned pinion and, on the other hand, with a gear of the second wheelwork.

3. A chronometer having its parts constructed, arranged and adapted to operate substantially as hereinbefore described with reference to the accompanying drawing.

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Agents for the Applicants.

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COMPLETE SPECIFICATION
This drawing is a reproduction of the Original on a reduced scale

FIG. 1

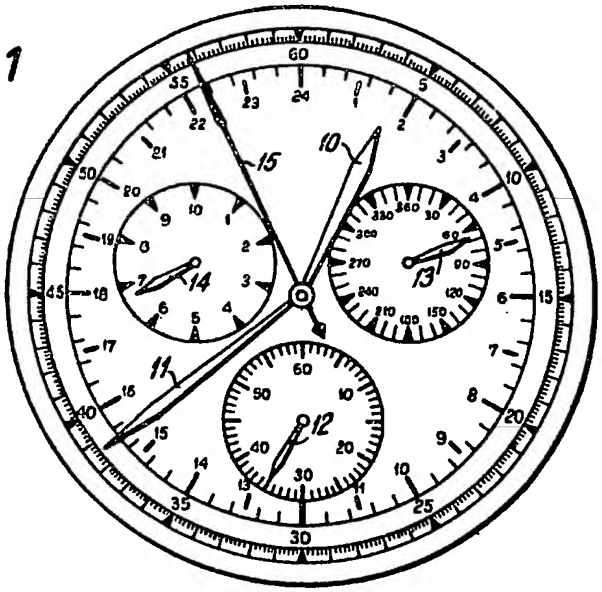


FIG. 2

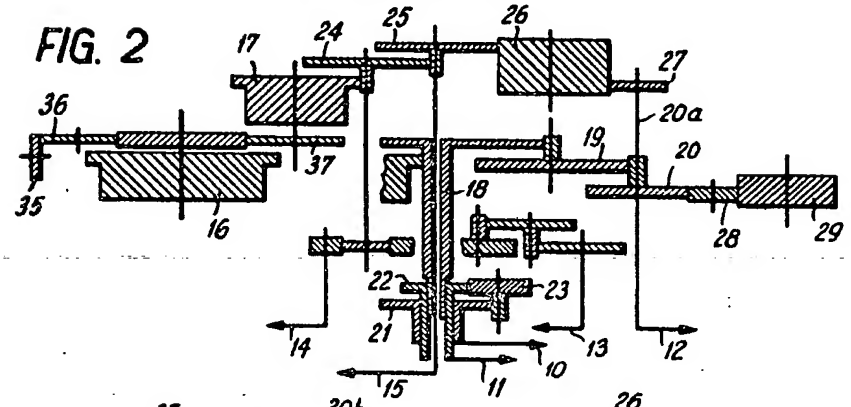
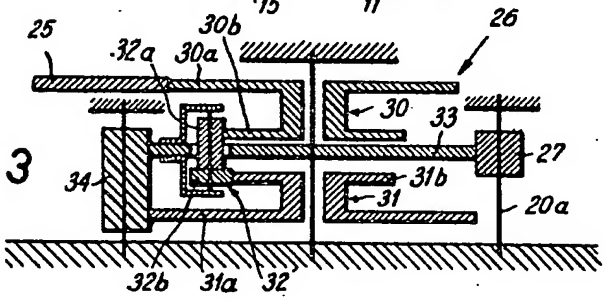


FIG. 3



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Dec. 30, 1941. A. M. BRAATEN 2,268,239

INTERNATIONAL CHRONOMETER

Filed Feb. 23, 1938 2 Sheets-Sheet 1

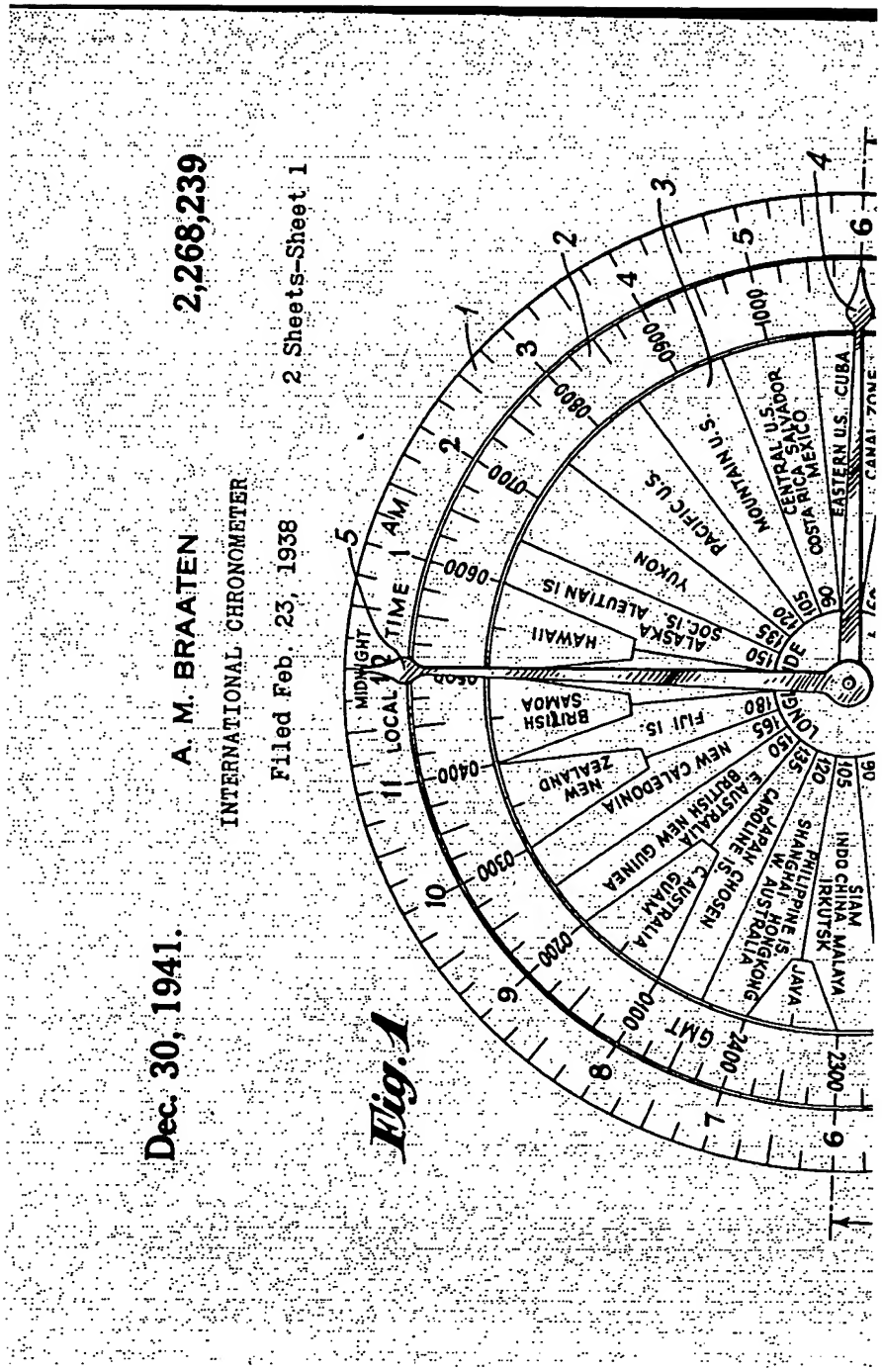

Fig. 1